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EXAMINER

CHAU, COREY P

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 03/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/733,234

Applicant(s)

KIMURA, MAKOTO

Examiner

Corey P. Chau

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/12/2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 5-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, and 5-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12/12/2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12/21/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “microphone assembly further comprises a room mirror **base** having an attachment hole to which the engagement portion of the receiving microphone is engaged, and an opening formed on a portion of the room mirror **base** which faces towards the receiving microphone” (claim 9), wherein “the sensitivity direction of the receiving microphone is oriented towards inside of a vehicular passenger compartment, and the sensitivity direction of the noise collecting microphone is oriented towards a space between a vehicle body outer plate and a wall of the vehicular passenger compartment, and the noise collecting microphone is disposed in the space between the vehicle body outer plate and the wall of the vehicular passenger compartment” (claim 1) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for

consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 9 recites "microphone assembly further comprises a room mirror **base** having an attachment hole to which the engagement portion of the receiving microphone is engaged, and an opening formed on a portion of the room mirror **base** which faces towards the receiving microphone", but does not clearly define the "room mirror base" in the disclosure to be attached to the headliner or to the windshield, which renders the claim indefinite because it is unclear to the Examiner how the "microphone assembly further comprises a room mirror **base** having an attachment hole to which the engagement portion of the receiving microphone is engaged, and an opening formed on a portion of the room mirror **base** which faces towards the receiving microphone",

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wherein "the sensitivity direction of the receiving microphone is oriented towards inside of a vehicular passenger compartment, and the sensitivity direction of the noise collecting microphone is oriented towards a space between a vehicle body outer plate and a wall of the vehicular passenger compartment, and the noise collecting microphone is disposed in the space between the vehicle body outer plate and the wall of the vehicular passenger compartment", if the "room mirror base is attached to the windshield of the vehicle.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 5-10, and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No 3995124 to Gabr in view of U.S. Patent Application Publication No. 20030068060 to Olson and U.S. Patent No. 6845162 to Emborg et al. (hereafter as Emborg) and U.S. Patent No. 6078673 to von Flotow et al. (hereafter as von Flotow).

7. Regarding Claim 1, Gabr discloses a vocal sound input apparatus (i.e. noise canceling microphone) for an automotive vehicle (column 1, lines 8-19), comprising:
a receiving microphone (14); and

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a noise collecting microphone (16), both of the receiving microphone and the noise collecting microphone being disposed at a predetermined portion of a vehicle body in such a manner that a sensitivity direction of the receiving microphone is opposite to a sensitivity direction of the noise collecting microphone (Fig. 1; column 1, lines 26-34),

wherein:

the sensitivity direction of the receiving microphone is oriented towards inside of a vehicular passenger compartment (column 1; lines 8-20; column 2, lines 41-51).

Gabr does not expressly disclose the sensitivity direction of the noise collecting microphone is oriented towards a space between a vehicle body outer plate and a wall of the vehicular passenger compartment. However, the Examiner takes Official Notice that it would have been obvious to one having ordinary skill in the art to direct a first microphone towards the mouth of a sound source and a second microphone directed so as to detect vehicular noise such as the noise generated from the engine or the roughness of the road (i.e. suspension system) in order to extract the noise from the first microphone signal to generate a signal representative speech with reduced noise. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Gabr to direct a second microphone (i.e. noise collecting microphone) directed so as to detect vehicular noise such as the noise generated from the engine or the roughness of the road (i.e. suspension system) in order to extract the noise from the first microphone signal to generate a signal representative speech with reduced noise.

Gabr as modified discloses a noise canceling microphone, which is mounted in a vehicle, but only generally; no specific hardware or software is taught. Therefore it would have been obvious to one having ordinary skill in the art to seek known locations in a vehicle to mount a microphone assembly.

Olson for example, discloses for some time now, microphone assemblies, containing one or more microphones have been installed in automobiles for communicating with a vehicular communication system, such as for hands-free cellular phone system. These microphone assemblies are frequently placed in a rear-view mirror, head-liner, overhead console, or the like, and change an acoustical signal into an electrical signal, and then pass the electrical signal on, either as-is, or with amplification and/or signal processing. The invention of Olson provides a microphone assembly for installation on a surface in a cabin of a vehicle to electrically couple the microphone with a vehicular communication system, wherein the microphone assembly may be located in areas of the vehicular cabin, such as a mirror assembly, a vehicular head-liner, an overhead console, or in a pod, such as depending from a mirror (Figs. 4 and 5; page 1, paragraphs 0004, 0009, and 0013; page 2, paragraph 0031).

Emborg for example, discloses microphones are mounted at the ceiling in such a way that they form an integrated structure with the ceiling in order for the microphone to be hidden (column 5, lines 22-34).

von Flotow for example, discloses multiple cells are placed in the trim panel cavity of a vehicle to decrease the acoustical impedance inside the trim panel cavity, which in turn reduces the transmission of noise into the cabin, wherein the system

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eliminates the need for noise reduction devices to be placed in the cabin (column 3, lines 1-14; column 4, lines 1-7).

It would have been obvious to one having ordinary skill in the art to employ any known locations in a vehicle to mount a microphone assembly, such as that of Olson, Emborg, or von Flotow. Therefore it would have been obvious to one having ordinary skill in the art to modify Gabr as modified with the teaching of Olson provides the microphone assembly for installation on a surface in a cabin of a vehicle to electrically couple the microphone with a vehicular communication system, wherein the microphone assembly may be located in areas of the vehicular cabin, such as a mirror assembly, a vehicular head-liner, an overhead console, or in a pod, such as depending from a mirror (Figs. 4 and 5; page 1, paragraphs 0004, 0009, and 0013; page 2, paragraph 0031) or to modify Gabr as modified with the teaching of Emborg to mount the microphone assembly to the ceiling in such a way that they form an integrated structure with the ceiling in order for the microphone assembly to be hidden (column 5, lines 22-34) or to modify Gabr as modified with the teaching of von Flotow place the microphone assembly in the trim panel cavity of a vehicle to decrease the acoustical impedance inside the trim panel cavity, which in turn reduces the transmission of noise into the cabin, wherein the system eliminates the need for noise reduction devices to be placed in the cabin (column 3, lines 1-14; column 4, lines 1-7).

Therefore, Gabr as modified discloses the sensitivity direction of the noise collecting microphone (16) is oriented towards a space between a vehicle body outer plate and a wall of the vehicular passenger compartment, and the noise collecting

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microphone is disposed in the space between the vehicle body outer plate and the wall of the vehicular passenger compartment.

8. All elements of Claim 5 are comprehended by Claim 1. Claim 5 is rejected for the reasons stated above apropos to Claim 1.

9. Regarding Claim 6, Gabr as modified discloses the microphone assembly comprises: a first plate (22) having a first circular center hole into which the receiving microphone is fitted, a second plate (22) juxtaposed to the first plate and having a center hole into which the noise collecting microphone is fitted (column 2, lines 28-40); a third plate having a third circular center hole with its center point through which a first line denoting the sensitivity direction of the receiving microphone is penetrated; and a fourth plate having a fourth circular center hole with its center point through which a second line denoting the sensitivity direction of the noise collecting microphone is penetrated (Figs 2 and 3; column 3, line 59 to column 4, line 40), both of the first line and the second line being on the same line but the directions thereof being mutually 180.degree. opposite to each other (Fig. 1).

10. All elements of Claim 7 are comprehended by Claim 1. Claim 7 is rejected for the reasons stated above apropos to Claim 1.

11. Regarding Claim 8, Gabr as modified discloses the microphone assembly further comprises a bracket having an attachment hole to a peripheral wall to which the engagement portions of the microphone assembly is engaged and the bracket is fixed to the interior trim material of the roof portion by means of fixing means, the first line

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being oriented toward the vehicular passenger compartment and the second line being oriented toward the roof portion of a vehicular outer plate (Olson, Figs. 2-4).

12. Regarding Claim 9, as best understood with regards to the 112, 2nd problem mentioned above, Gabr as modified discloses a microphone assembly for installation on a surface in a cabin of a vehicle, wherein the vehicular surface is a part of a rearview mirror, a vehicular head-liner, a vehicular overhead console, or the like, but does not expressly disclose the microphone assembly further comprises a room mirror base having an attachment hole to which the engagement portion of the receiving microphone is engaged, and an opening formed on a portion of the room mirror base which faces towards the receiving microphone. However, the Examiner takes Official Notice that it would have been obvious to one having ordinary skill in the art to place the microphone assembly on any vehicular surface such as a room mirror base in order to provide the desired location. Therefore it would have been obvious to one having ordinary skill in the in art at the time the invention was made to modify Gabr as modified to place the microphone assembly in the room mirror base wherein the an attachment hole (Olson, reference 14a, the surface where the microphone assembly is secured to; Figs. 2-4) to which the engagement portion of the receiving microphone is engaged, and an opening formed on a portion of the room mirror base which faces towards the receiving microphone (i.e. the opening on surface of 18)(Olson, Figs. 2-3) in order to provide the desired location.

13. Regarding Claim 10, Gabr as modified discloses the noise collecting microphone is connected to an adder, via an inverter and the receiving microphone is connected to

the adder and an output of the adder is connected to a voice recognition system mounted in the vehicle (column 2, lines 52-59).

14. Claim 13 is essentially similar to Claim 1 and is rejected for the reasons stated above apropos to Claim 1.

15. Claim 14 is essentially similar to Claim 1 and is rejected for the reasons stated above apropos to Claim 1.

16. Claim 15 is essentially similar to Claim 1 and is rejected for the reasons stated above apropos to Claim 1.

17. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No 3995124 to Gabr in view of U.S. Patent Application Publication No. 20030068060 to Olson and U.S. Patent No. 6845162 to Emborg and U.S. Patent No. 6078673 to von Flotow as applied to claims 1, 5-10, and 13-15 above, and further in view of U.S. Patent Application Publication No. 20050156753 to DeLine et al. (hereafter as DeLine).

18. Regarding Claim 11, Gabr as modified discloses one of the microphones is connected to an adder via an inverter, and the other one of the microphones is connected to the adder (column 2, lines 52-59; column 1, lines 46-68), but does not expressly disclose an output of the adder is connected to a hand-free telephone apparatus mounted in the vehicle. DeLine discloses many vehicle today use hands-free cellular telephones or other communication devices to avoid problems which may arise when a driver of a vehicle has to hold a telephone while driving the vehicle (page 1,

paragraph 0003; page 4, paragraph 0035). Therefore it would have been obvious to one having ordinary skill in the art to modify Gabr as modified with the teaching of DeLine to utilize the noise canceling microphone in association with a hands-free cellular telephones or other communication devices to avoid problems which may arise when a driver of a vehicle has to hold a telephone while driving the vehicle, which provide a hands-free cellular system substantial freedom from echoes and noises, such as ambient or field noises.

19. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No 3995124 to Gabr in view of U.S. Patent Application Publication No. 20030068060 to Olson and U.S. Patent No. 6845162 to Emborg and U.S. Patent No. 6078673 to von Flotow as applied to claims 1, 5-10, and 13-15 above, and further in view of U.S. Patent No. 6748308 to Losey.

20. Regarding Claim 12, Gabr as modified does not expressly disclose a vehicle speed sensor is connected to a switch to connect the noise collecting microphone to the inverter when a vehicle speed detected by the vehicle speed sensor is equal to or higher than a predetermined vehicle speed. However it would have been obvious to one having ordinary skill in the art to provide such a vehicle speed sensor connected to a switch connect the noise collecting microphone to the inverter when a vehicle speed detected by the vehicle speed sensor is equal to or higher than a predetermined vehicle speed in order reduce noise when noise is equal to or higher than a predetermined vehicle speed because the noise generated increases as the vehicle speed increases

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as taught by Losey. Losey teaches that a high speed of a vehicle may cause excessive noise, which may be bothersome to drivers and/or passengers of the vehicle (column 1, lines 19-36). Losey discloses a vehicle speed sensor in use with a switch to activate or deactivate a feature of a vehicle when the speed of the vehicle is above a threshold in order to reduce noise (column 3, lines 3-30; column 3, line 58 to column 4, line 19).

Although Losey discloses activation or deactivation of power windows system, Losey teaches that as the speed of the vehicle increases, the noise generated increases and therefore to perform an operation to reduce the noise when the speed of the vehicle is above a threshold so that the noise does not become bothersome to drivers and/or passengers of the vehicle. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Gabr as modified with the teaching of Losey to utilize a vehicle speed sensor with a switch to activate or deactivate the noise receiving microphone when the speed of a vehicle is above a threshold in order to reduce noise when needed.

21. Claims 1, 5, 10, and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. 20020031234 to Wenger et al. (hereafter as Wenger).

22. Regarding Claim 1, Wenger discloses a vocal sound input apparatus for an automotive vehicle (abstract) comprising:

a receiving microphone (Figs. 1 and 2; page 1, paragraphs 0011, 0013 and 0021; page 2, paragraph 0025); and

a noise collecting microphone, both of the receiving microphone and the noise collecting microphone being disposed at a predetermined portion of a vehicle body in such a manner that a **sensitivity direction** of the receiving microphone is opposite to a **sensitivity direction** of the noise collecting microphone (Figs. 1 and 2; page 1, paragraphs 0011, 0013 and 0021; page 2, paragraph 0025),

wherein:

the sensitivity direction of the receiving microphone is oriented towards inside of a vehicular passenger compartment (page 2, paragraph 0023).

Wenger does not expressly disclose the sensitivity direction of the noise collecting microphone is oriented towards a space between a vehicle body outer plate and a wall of the vehicular passenger compartment. However, the Examiner takes Official Notice that it would have been obvious to one having ordinary skill in the art to direct a first microphone towards the mouth of a sound source and a second microphone directed so as to detect vehicular noise such as the noise generated from the engine or the roughness of the road (i.e. suspension system) in order to extract the noise from the first microphone signal to generate a signal representative speech with reduced noise. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Wenger to direct a second microphone (i.e. noise collecting microphone) directed so as to detect vehicular noise such as the noise generated from the engine or the roughness of the road (i.e. suspension system) in order to extract the noise from the first microphone signal to generate a signal representative speech with reduced noise.

the noise collecting microphone is disposed in the space between the vehicle body outer plate and the wall of the vehicular passenger compartment (i.e. other location microphone array 12 are also possible. For example, the vehicular cabin includes a headliner 32, and the microphone array 12 can be located **within the headliner 32**. The vehicular cabin may also include a overhead console 34, and the microphone array 12 can be located **within the overhead console 34**. The vehicular cabin includes a dashboard 36, and the microphone array 12 can be located **within the dashboard 36**. The vehicular cabin also includes a visor 40, and the microphone array 12 can be located within the visor 40. The vehicular cabin includes also a pillar 42, and the microphone array 12 can be located **within the pillar 12**. Other possible locations include a headrest 44, a steering wheel 46, or a **compartment door 48**).

23. All elements of Claim 5 are comprehended by Claim 1. Claim 5 is rejected for the reasons stated above apropos to Claim 1.

24. Regarding Claim 10, Wenger as modified discloses the noise collecting microphone is connected to an adder, via an inverter and the receiving microphone is connected to the adder and an output of the adder is connected to a voice recognition system mounted in the vehicle (page 2, paragraph 0025).

25. Claim 13 is essentially similar to Claim 1 and is rejected for the reasons stated above apropos to Claim 1.

26. Claim 14 is essentially similar to Claim 1 and is rejected for the reasons stated above apropos to Claim 1.

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27. Claim 15 is essentially similar to Claim 1 and is rejected for the reasons stated above apropos to Claim 1.

28. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. 20020031234 to Wenger in view of U.S. Patent Application Publication No. 20050156753 to DeLine.

29. Regarding Claim 11, Wegner as modified discloses one of the microphones is connected to an adder via an inverter, and the other one of the microphones is connected to the adder, and an output of the adder is connected to a cell phone (page 1, paragraph 0021; page 2, paragraph 0022), but does not expressly disclose an output of the adder is connected to a hand-free telephone apparatus mounted in the vehicle. DeLine discloses many vehicle today use hands-free cellular telephones or other communication devices to avoid problems which may arise when a driver of a vehicle has to hold a telephone while driving the vehicle (page 1, paragraph 0003; page 4, paragraph 0035). Therefore it would have been obvious to one having ordinary skill in the art to modify Wegner as modified with the teaching of DeLine to utilize the noise canceling microphone in association with a hands-free cellular telephones or other communication devices to avoid problems which may arise when a driver of a vehicle has to hold a telephone while driving the vehicle, which provide a hands-free cellular system substantial freedom from echoes and noises, such as ambient or field noises.

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30. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. 20020031234 to Wenger in view of U.S. Patent No. 6748308 to Losey.

31. Regarding Claim 12, Wegner as modified does not expressly disclose a vehicle speed sensor is connected to a switch to connect the noise collecting microphone to the inverter when a vehicle speed detected by the vehicle speed sensor is equal to or higher than a predetermined vehicle speed. However it would have been obvious to one having ordinary skill in the art to provide such a vehicle speed sensor connected to a switch connect the noise collecting microphone to the inverter when a vehicle speed detected by the vehicle speed sensor is equal to or higher than a predetermined vehicle speed in order to reduce noise when noise is equal to or higher than a predetermined vehicle speed because the noise generated increases as the vehicle speed increases as taught by Losey. Losey teaches that a high speed of a vehicle may cause excessive noise, which may be bothersome to drivers and/or passengers of the vehicle (column 1, lines 19-36). Losey discloses a vehicle speed sensor in use with a switch to activate or deactivate a feature of a vehicle when the speed of the vehicle is above a threshold in order to reduce noise (column 3, lines 3-30; column 3, line 58 to column 4, line 19). Although Losey discloses activation or deactivation of power windows system, Losey teaches that as the speed of the vehicle increases, the noise generated increases and therefore to perform an operation to reduce the noise when the speed of the vehicle is above a threshold so that the noise does not become bothersome to drivers and/or passengers of the vehicle. Therefore it would have been obvious to one having ordinary

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skill in the art at the time the invention was made to modify Wegner as modified with the teaching of Losey to utilize a vehicle speed sensor with a switch to activate or deactivate the noise receiving microphone when the speed of a vehicle is above a threshold in order to reduce noise when needed.

32. Claims 1, 5, 10-11, 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. 20050156753 to DeLine in view of U.S. Patent Application Publication No. 20030068060 to Olson.

33. Regarding Claim 1, DeLine discloses a vocal sound input apparatus for an automotive vehicle (abstract), comprising:

a receiving microphone (Figs. 12 and 13; page 25, paragraphs 0122-0123); and
a noise collecting microphone (Figs. 12 and 13; page 25, paragraphs 0122-0123), both of the receiving microphone and the noise collecting microphone being disposed at a predetermined portion of a vehicle body in such a manner that a sensitivity direction of the receiving microphone is opposite to a sensitivity direction of the noise collecting microphone (Figs. 12 and 13; page 25, paragraphs 0122-0123),

wherein:

the sensitivity direction of the receiving microphone is oriented towards inside of a vehicular passenger compartment (Figs. 12 and 13; page 25, paragraphs 0122-0123) and the sensitivity direction of the noise collecting microphone is oriented towards a space between a vehicle body outer plate and a wall of the vehicular passenger compartment (Figs. 12 and 13; page 25, paragraphs 0122-0123).

Olson discloses for some time now, microphone assemblies, containing one or more microphones have been installed in automobiles for communicating with a vehicular communication system, such as for hands-free cellular phone system. These microphone assemblies are frequently placed in a rear-view mirror, head-liner, overhead console, or the like, and change an acoustical signal into an electrical signal, and then pass the electrical signal on, either as-is, or with amplification and/or signal processing. The microphone assembly must in some manner be electrically coupled to the balance of the vehicular communication system. It has been found to be difficult to make this electrical connection properly, which adds cost and complexity to both the design, as well as to the assembly process. The invention of Olson provides a microphone assembly for installation on a surface in a cabin of a vehicle to electrically couple the microphone with a vehicular communication system, wherein the microphone assembly may be located in areas of the vehicular cabin, such as a mirror assembly, a vehicular head-liner, an overhead console, or in a pod, such as depending from a mirror (Figs. 4 and 5; page 1, paragraphs 0004, 0009, and 0013; page 2, paragraph 0031). Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify DeLine with the teaching of Olson to provides a microphone assembly for installation on a surface in a cabin of a vehicle to electrically couple the microphone with a vehicular communication system, wherein the microphone assembly may be located in areas of the vehicular cabin, such as a mirror assembly, a vehicular head-liner, an overhead console, or in a pod, such as depending from a mirror

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in order for the microphone assembly without adding cost and complexity to both the design, as well as to the assembly process.

Therefore, DeLine as modified discloses the noise collecting microphone is disposed in the space between the vehicle body outer plate and the wall of the vehicular passenger compartment.

34. All elements of Claim 5 are comprehended by Claim 1. Claim 5 is rejected for the reasons stated above apropos to Claim 1.

35. Regarding Claim 10, DeLine as modified discloses the noise collecting microphone is connected to an adder, via an inverter and the receiving microphone is connected to the adder and an output of the adder is connected to a voice recognition system mounted in the vehicle (Figs. 12 and 13; page 25, paragraphs 0122-0123).

36. Regarding Claim 11, DeLine as modified discloses one of the microphones is connected to an adder via an inverter, and the other one of the microphones is connected to the adder, and an output of the adder is connected to a hand-free telephone apparatus mounted in the vehicle (page 1, paragraph 0003; page 4, paragraph 0035).

37. Claim 13 is essentially similar to Claim 1 and is rejected for the reasons stated above apropos to Claim 1.

38. Claim 14 is essentially similar to Claim 1 and is rejected for the reasons stated above apropos to Claim 1.

39. Claim 15 is essentially similar to Claim 1 and is rejected for the reasons stated above apropos to Claim 1.

40. Claim 12 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. 20050156753 to DeLine in view of U.S. Patent Application Publication No. 20030068060 to Olson as applied to claims 1, 5, 10, 11, and 13-15 are above, and further in view of U.S. Patent No. 6748308 to Losey.

41. Regarding Claim 12, DeLine as modified does not expressly disclose a vehicle speed sensor is connected to a switch to connect the noise collecting microphone to the inverter when a vehicle speed detected by the vehicle speed sensor is equal to or higher than a predetermined vehicle speed. However it would have been obvious to one having ordinary skill in the art to provide such a vehicle speed sensor connected to a switch connect the noise collecting microphone to the inverter when a vehicle speed detected by the vehicle speed sensor is equal to or higher than a predetermined vehicle speed in order reduce noise when noise is equal to or higher than a predetermined vehicle speed because the noise generated increases as the vehicle speed increases as taught by Losey. Losey teaches that a high speed of a vehicle may cause excessive noise, which may be bothersome to drivers and/or passengers of the vehicle (column 1, lines 19-36). Losey discloses a vehicle speed sensor in use with a switch to activate or deactivate a feature of a vehicle when the speed of the vehicle is above a threshold in order to reduce noise (column 3, lines 3-30; column 3, line 58 to column 4, line 19). Although Losey discloses activation or deactivation of power windows system, Losey teaches that as the speed of the vehicle increases, the noise generated increases and therefore to perform an operation to reduce the noise when the speed of the vehicle is

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above a threshold so that the noise does not become bothersome to drivers and/or passengers of the vehicle. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify DeLine as modified with the teaching of Losey to utilize a vehicle speed sensor with a switch to activate or deactivate the noise receiving microphone when the speed of a vehicle is above a threshold in order to reduce noise when needed.

Response to Arguments

42. Applicant's arguments with respect to claims 1 and 5-15 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

43. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent Application Publication No. 20050276423 to Aubauer et al discloses a method and device for receiving and treating audio signals in surrounding affected by noise.

44. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Corey P. Chau whose telephone number is (571)272-7514. The examiner can normally be reached on Monday - Friday 9:00 am - 5:00 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on (571)272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

March 16, 2006
CPC



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